

# On Nuclear Deterrence and Assurance

*Keith B. Payne*

*Weakness is provocative.*

—Donald Rumsfeld

GIVEN THE diversity of opponents US leaders now must hope to deter and the variety of circumstances in which deterrence and assurance will be important goals, a broad spectrum of US strategic capabilities may be necessary. In some plausible cases, nonmilitary capabilities will suffice, while in others the immense lethality of US nuclear threats is likely to be required. In some cases *punitive* US threats will not deter because the opponent will accept great risks, but *denying* that opponent a practicable vision of success may deter.

US nonnuclear threats and employment options often are likely to be salient for punitive and denial deterrence. For example, in regional contingencies where US stakes at risk do not appear to involve national survival or the survival of allies, some opponents are likely to view US nuclear threats as incredible regardless of the character of the US arsenal or the tone of US statements. And, when US priority goals include postconflict “nation-building” and the reconstruction of a defeated opponent, US advanced nonnuclear threats may be *more credible* because highly discriminate threats will be more compatible with US stakes, interests, and the goals of postconflict reconciliation and reconstruction.<sup>1</sup>

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Dr. Keith B. Payne is president of the National Institute for Public Policy, a nonprofit research center he cofounded in 1981. He serves as a full professor and department head at the Graduate Department of Defense and Strategic Studies, Missouri State University, Washington, DC, metropolitan area campus. He is chairman of the Policy Panel of the US Strategic Command’s Senior Advisory Group, co-chair of the Nuclear Strategy Forum, and a member of the Department of State’s International Security Advisory Board. He serves on the Nuclear Posture Commission created by Congress in 2008. Dr. Payne was deputy assistant secretary of defense for forces policy from 2002 to 2003 and, prior to assuming that position, was the co-chair of the Deterrence Concepts Advisory Group, Office of the Secretary of Defense. He has served as a consultant to the White House, the Arms Control and Disarmament Agency, and the Department of Defense, and as a member of the Department of State’s Defense Trade Advisory Group. He received the Department of Defense Medal for Distinguished Public Service in 2003.

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## No Deterrence Value for Nuclear Weapons?

Some contemporary commentators take the plausible cases described above to the extreme and assert that US nuclear weapons now offer little or no added value for deterrence over nonnuclear capabilities. The rationale for this assertion is derived from the old balance of terror formula: predictable deterrent effect is equated to the United States' capability to threaten the destruction of a select set of opponents' tangible, physical targets. Consequently, if nonnuclear weapons now can threaten to destroy most or all of that set of targets, then nuclear weapons supposedly no longer are of value for deterrence. The vulnerability of the designated targets, not the specific US instrument of threat, is expected to determine the deterrent effect.

The first of these propositions—that deterrent effect can be equated to target coverage—is fundamentally flawed. The second also is highly suspect; it certainly is possible to *hope* that US nuclear weapons no longer are critical for deterrence, just as it is possible to hope that all leaders will learn to be responsible and prudent. To assert confidently that US nuclear weapons no longer are valuable for deterrence purposes, however, is to claim knowledge about how varied contemporary and future leaders in diverse and often unpredictable circumstances will interpret and respond to the distinction between nuclear and nonnuclear threats. Those who make such a claim presume knowledge that they do not and cannot have.

In addition, a popular refrain of some commentators is that US nuclear weapons should be considered useful *only for deterring nuclear attack*.<sup>2</sup> This is not, and has not been, US deterrence policy. The only apparent rationale for this assertion is to buttress the claim that the deterrence value of nuclear weapons is narrow in scope and purpose and that the commentators' favored steps toward nuclear disarmament could eliminate even that value; if deterring nuclear threats is the *only purpose for US nuclear weapons*, they will then have *no unique value* if others move away from nuclear weapons.

This proposition is logical but artificially narrow. It misses other severe nonnuclear threats to the United States and allies that may not be deterred reliably absent US nuclear capabilities, such as threats posed by chemical and biological weapons (CBW). Commentators can claim for political reasons that US nuclear capabilities should be considered pertinent for deterring only nuclear threats but CBW threats are real and growing and there is no basis to conclude that US nonnuclear capabilities would suffice to deter them. Even if the vision of the complete worldwide elimination

of nuclear weapons were to be realized, CBW threats would remain. The most that can be said in this regard is that US nuclear weapons might or might not be necessary for this deterrence goal—hardly a robust basis for making profound policy decisions about the most fundamental security questions.

Thinking through some plausible scenarios may be helpful in this regard. For example, if an opponent were to escalate an intense, ongoing conventional conflict by employing CBW with horrific effect against US forces, civilians, or allies, a high-priority US goal would likely be to deter the opponent's subsequent use of CBW. The US deterrence message to the opponent in this case could be that the opponent would suffer exceedingly if it were to repeat CBW use—that the United States would so raise the risks of the conflict for the opponent that it would *choose not to repeat its use of CBW* (even if its initial employment proved useful militarily or politically). This message could be intended to deter a second CBW attack during the crisis at hand and also to send a message to any hostile third parties that they must never consider CBW use against the United States and its allies.

The question in this scenario is whether US *nonnuclear capabilities* alone would constitute an adequate basis for this deterrence message. As noted above, there is no useful a priori answer to this question. Some plausible circumstances, however, suggest the potential unique value of nuclear threats. For example, if a pitched conventional conflict is in progress and the opponent already has been subjected to an intense US campaign of nonnuclear “shock and awe,” could the threat of further US nonnuclear fire in response to an opponent's CBW attack be decisive in the opponent's decision making? The United States could threaten to set aside some targeting limitations on its nonnuclear forces for this deterrence purpose. Would such a nonnuclear threat dominate the opponent's calculation of risk, cost, and gain? Or, might it look like “more of the same” and have little prospect of being decisive in the opponent's decision making?

The answers to such questions certainly are not so self-evident as to suggest that US nuclear threats would provide no unique added deterrent value. Nuclear weapons may be so much more lethal and distinguishable from nonnuclear threats that, on occasion, they can deter an opponent who would not otherwise be susceptible to control. Strategic nuclear threats have the potentially important advantages of extreme lethality from afar and a relatively obvious firebreak. These could be important qualities to deter CBW first or second use and to help deter future third-party CBW

use. Clinton administration secretary of defense Les Aspin rightly pointed to the prospective value of US nuclear weapons for the deterrence of CBW threats given the proliferation of the latter: "Since the United States has forsworn chemical and biological weapons, the role of US nuclear forces in deterring or responding to such nonnuclear threats must be considered."<sup>3</sup>

How and what might constitute an "adequate" US mode of deterrence will depend on the details of the engagement, including opponents' values, vulnerabilities, risk tolerances, perceptions, access to information, and attention. Confident a priori assertions that nuclear threats *are sure to make the decisive difference* for deterrence purposes, or that they *can provide no significant added value*, betray only the pretense of knowledge regarding how opponents will calculate and behave in the future. Even with a careful assessment of the pertinent details of opponent and context, precise prediction about the linkage of specific threat to deterrent effect is subject to uncertainties.

Nevertheless, a common proposition, initially expressed soon after the Cold War by Paul Nitze, is that the United States may now consider converting its strategic deterrent from nuclear weapons to "smart conventional weapons" because the latter can carry out many of the same "combat missions."<sup>4</sup> Nuclear weapons are said to be of limited and indeed declining value because there are "no conceivable circumstances in which the United States would need to use or could justify the use of nuclear weapons to fight or terminate a conventional conflict with a nonnuclear adversary."<sup>5</sup> This proposition ignores the potential value of nuclear weapons for the deterrence of CBW; it also misses the fundamental point that deterrence requirements are *not set by what may be necessary to "fight or terminate" a conflict*.

Linking the assertion that there are few, if any, necessary "combat" roles for nuclear weapons to the conclusion that nuclear weapons lack *deterrence* value is a non sequitur, even if true. Nuclear weapons could be deemed to have no value whatsoever for combat missions and remain absolutely key to the deterrence of war and the assurance of allies. Deterrence involves exploiting opponents' fears and sensitivities and may have little or no connection to US preferences for the wartime employment of force for combat missions. Assurance, in turn, requires the easing of allies' fears and sensitivities, which again may have little or nothing to do with how the United States might prefer to terminate a conflict. Whether US nuclear capabilities are regarded as useful or not "to fight or terminate a

conventional conflict” may tell us nothing about their potential value for the political/psychological purposes of assurance and punitive deterrence. Deterrence, assurance, and war fighting are different functions with possibly diverse and separate standards for force requirements. The potentially different force standards for these different goals should not be confused.

This most basic confusion was apparent during the congressional discussions of the Robust Nuclear Earth Penetrator (RNEP). The RNEP evolved from studies conducted during the Clinton administration and subsequently was pursued by the Bush administration as *potentially important for deterrence purposes*.<sup>6</sup> Yet, some congressional opponents of the RNEP pointed to the apparent lack of a “specific military requirement” as a basis for their opposition.<sup>7</sup> One prominent member of Congress stated that no “military requirement for a nuclear earth penetrator” has been “articulated to me.”<sup>8</sup>

The pertinent questions for the RNEP had less to do with any expressed *military requirement* for this niche capability than whether a persuasive case could be made that it would be important for deterrence of significant threats and the assurance of allies. The uniformed military in general may have limited appreciation for a system that, as discussed by political leaders, would be useful as a *withheld* instrument for deterrence. If I can’t use it, what good is it? is an understandable question. That “use” standard, however, may have limited relevance when the value of a nuclear capability is determined more by opponent and allied perceptions of it than by US employment plans.

## **The Apparent Value of Nuclear Weapons for Deterrence**

Whether or not nuclear weapons are considered useful for combat missions or have been asked for by military commanders, a quick review of available evidence points toward their potentially unique value or deterrence and assurance. For example, in the 1991 Gulf War, Iraq launched 88 conventionally armed Scud missiles against targets in Israel and Saudi Arabia; those missile strikes continued until the end of the war. In Israel and the United States there was concern that Iraq would use chemical weapons.<sup>9</sup> The anticipation of such attacks led Israeli citizens to take shelter in specially sealed rooms and to wear gas masks. Although Iraq did not employ chemical or biological warheads, Scud strikes directly inflicted more than 250 Israeli casualties and were indirectly responsible for a dozen

deaths, including children, resulting from the improper use of gas masks.<sup>10</sup> UN officials have stated that Iraqi bombs and missiles contained enough biological agents to kill hundred of thousands,<sup>11</sup> and US officials have confirmed that *if* Iraq had used available biological weapons, the military and civilian casualty levels could have been horrific.<sup>12</sup>

Saddam Hussein was neither a philanthropist nor particularly humane. Why then did he *not* use the available chemical or biological weapons? Was he deterred by the prospect of *nuclear retaliation*? Israeli commentators frequently suggest that the apparent Israeli nuclear threat deterred Iraqi chemical use. In this regard it should be noted that during a CNN interview on 2 February 1991, then-US defense secretary Dick Cheney was asked about the potential for Israeli nuclear retaliation to Iraqi chemical strikes. Secretary Cheney observed that this would be a decision that “the Israelis would have to make—but I would think that [Hussein] has to be cautious in terms of how he proceeds in his attacks against Israel.” The following day, when asked about Secretary Cheney’s statement, Israeli defense minister Moshe Arens replied, “I think he said that Saddam has reasons to worry—yes, he does have reasons to worry.”<sup>13</sup> This reply, and Secretary Cheney’s original statement—in which he did not object to the premise of the question about the possibility of Israeli nuclear retaliation, at least to Israeli analysts—was key to deterring Iraqi chemical weapons use.<sup>14</sup>

The possible direct US role in nuclear deterrence in this case should be highlighted.<sup>15</sup> On 9 January 1991, Secretary of State James Baker expressed a severe deterrent threat to Iraqi foreign minister Tariq Aziz in Geneva: “Before we cross to the other side—that is, if the conflict starts, God forbid, and chemical or biological weapons are used against our forces—the American people would demand revenge, and we have the means to implement this.”<sup>16</sup>

President Bush’s strongly worded letter to Saddam Hussein warned against the use of chemical or biological weapons. It spoke of the “strongest possible” US response and warned that, “you and your country will pay a terrible price” in the event of “such unconscionable acts.”<sup>17</sup>

Secretary Cheney also implicitly linked US nuclear threats to Iraqi use of WMD: “The other point that needs to be made, and it’s one I have made previously, is that he [Hussein] needs to be made aware that the President will have available the full spectrum of capabilities.”<sup>18</sup>

Such statements by then-ranking US and Israeli officials, while not explicitly threatening nuclear retaliation, certainly implied the possibility.



These threats appear to be a plausible explanation for Iraqi restraint with regard to chemical and biological weapons. Following the 1991 Gulf War, authoritative accounts of Iraqi wartime decision making on this issue emerged. In August 1995, Iraqi foreign minister Tariq Aziz reported to Amb. Rolf Ekeus, a UN weapons inspector, that “Iraq was deterred from using its WMD because the Iraqi leadership had interpreted Washington’s threats of grievous retaliation as meaning *nuclear* retaliation.”<sup>19</sup>

Tariq Aziz’s explanation has been corroborated by former senior Iraqi military officials, including Gen Wafic Al Sammarai, then head of Iraqi military intelligence. General Sammarai stated, “Some of the Scud missiles were loaded with chemical warheads, but they were not used. They were kept hidden throughout the war. We didn’t use them because the other side had a deterrent force.”<sup>20</sup> He added, “I do not think Saddam was capable of making a decision to use chemical weapons or biological weapons, or any other type of weapons against the allied groups, because the warning was quite severe, and quite effective. *The allied troops were certain to use nuclear arms and the price will be too dear and too high.*”<sup>21</sup> Similarly, Iraqi general Hussein Kamal, Saddam Hussein’s son-in-law and Iraqi minister of military industries, reportedly stated following his defection from Iraq in 1995 that “during the Gulf War, there was no intention to use chemical weapons as the Allied force was overwhelming . . . there was no decision to use chemical weapons for fear of retaliation. They realized that if chemical weapons were used, *retaliation would be nuclear.*”<sup>22</sup> At the time, the fact that some US naval vessels reportedly were deployed with nuclear capabilities aboard may have contributed to this helpful Iraqi view.<sup>23</sup>

In 1995, Brent Scowcroft, President Bush’s national security advisor during the 1991 Gulf War, revealed publicly that US leaders had decided in fact that the United States would *not* respond to Iraqi WMD use with nuclear weapons. Rather, according to Scowcroft, the United States would have expanded its conventional attacks against Iraqi targets.<sup>24</sup> And President Bush has stated that “it [nuclear use] was not something that we really contemplated at all.”<sup>25</sup> Nevertheless, according to the accounts by Tariq Aziz, Gen Hussein Kamal, and Gen Wafic Al Sammarai, the Iraqi leadership *believed* that the United States would have retaliated with nuclear weapons—and the expectations appear to have deterred—as clearly was intended by US officials.

On this occasion, *implicit US nuclear* threats appear to have deterred as hoped; Schelling’s proposition regarding the deterring effect of pos-



sible nuclear escalation appears to have been demonstrated. The fact that many in the US senior wartime leadership later explained publicly that the United States would *not* have employed nuclear weapons may help to degrade that deterrent effect for the future. A comment by Bernard Brodie vis-à-vis the Soviet Union in 1963 may be apropos: If the opponent is under the “apparent conviction” that the US nuclear deterrent is credible, “why should we attempt to shake that conviction?”<sup>26</sup> Nevertheless, the point here is that the 1991 Gulf War appears to offer evidence that *nuclear* deterrence, on occasion, can be uniquely effective. Saddam Hussein appears to have been confident that he could withstand the pressure of conventional war with the United States—perhaps based upon his relatively dismissive view of the US will to fight a bloody conventional war. When Secretary of State James Baker told Tariq Aziz of the “overwhelming” conventional power that would be “brought to bear” against Iraq, Aziz responded, “Mr. Secretary, Iraq is a very ancient nation. We have lived for 6,000 years. I have no doubts that you are a very powerful nation. I have no doubts that you have a very strong military machine and you will inflict on us heavy losses. But Iraq will survive and this leadership will decide the future of Iraq.”<sup>27</sup> This prediction proved accurate for a decade.

Of course, the explanations of apparent Iraqi restraint offered by Tariq Aziz, Wafic Al Sammarai, and Hussein Kamal do not close the issue; they do, however, suggest that *nuclear* deterrence was at least part of the answer as to why Saddam Hussein did not use WMD in 1991 when he apparently had the option to do so. These explanations also suggest the profound error of those prominent commentators who asserted with such certainty immediately after the 1991 war that nuclear weapons were “incredible as a deterrent and therefore irrelevant,”<sup>28</sup> and the fragility of similar contemporary claims that US nuclear threats are incredible and thus useless for contemporary regional deterrence purposes.<sup>29</sup>

Prominent American commentators can assert that nuclear weapons are incredible and thus useless in such cases; their speculation about US threat credibility, however, ultimately is irrelevant. For deterrence purposes, it is *the opponent's belief* about US threat credibility that matters, and that cannot be ascertained from the views of American domestic commentators. The 1991 Gulf War appears to demonstrate that Iraqi officials perceived US threats as nuclear and sufficiently credible to deter, and that this *perception was more important* to US deterrence strategy than were actual US intentions. Nuclear deterrence appears to have played a significant role

despite the fact that US leaders apparently saw no need to employ nuclear weapons and had no intention of doing so.

There is little doubt that US *nuclear* threats have contributed to the deterrence of additional past opponents who otherwise may have been particularly resistant to US nonnuclear threats. This deterrent effect is a matter of adversary perceptions—which can be independent of our preferences or intentions regarding the use of force. However we might prefer to deter or plan to employ force, the actual behavior of adversaries on occasion suggests that there can be a difference between the deterring effects of nuclear and nonnuclear weapons. In some past cases, given the adversary's views and the context, it has been “the reality of nuclear deterrence” that has had the desired “restraining effect.”<sup>30</sup> In the future, as in the past, the working of deterrence on such occasions may be extremely important.

There is some additional evidence from countries such as North Korea that opponents continue to attribute unique deterrence value to US nuclear weapons. For example, during a 2005 visit by a US congressional delegation to North Korea, Rep. Curt Weldon, then vice-chairman of the House Armed Services Committee, raised with senior North Korean military and political leaders the US interest in a nuclear capability to threaten hardened and deeply buried targets. According to the after-trip report by Congressman Weldon and other members of the bipartisan delegation, this was the only US military capability that appeared to concern the North Korean leadership and “got their attention,” suggesting its potential deterrence value.<sup>31</sup> North Korean statements regarding US nuclear “bunker burst” capabilities also appear to reveal an unparalleled concern about the possibility of such US nuclear capabilities, thereby suggesting their potential value for deterrence.<sup>32</sup>

Rogues and potential opponents are expending considerable effort on hard and deeply buried bunkers. Some of these bunkers reportedly can be held at risk of destruction *only via nuclear weapons*.<sup>33</sup> During the 1991 Gulf War, some Iraqi bunkers were “virtually invulnerable to conventional weapons.”<sup>34</sup> In 1999, concerted NATO air attacks reportedly could not destroy a deep tunnel complex at the Pristina Airport in Kosovo. As a British inspector on the ground at the time reported, “On June 11, hours after NATO halted its bombing and just before the Serb military began withdrawing, 11 Mig-21 fighters emerged from the tunnels and took off for Yugoslavia.”<sup>35</sup> Similarly, in 1996, senior Clinton administration officials observed that *only* nuclear weapons could threaten to destroy the

suspected Libyan chemical weapons facility located inside a mountain near Tarhunah.<sup>36</sup> Moreover, the US Cold War “legacy” nuclear arsenal apparently has limitations against some protected targets. “Furthermore, the current [nuclear] inventory only has a limited capability for holding hardened underground facilities at risk. The country’s only nuclear earth penetrating weapons . . . cannot survive delivery into certain types of terrain in which such facilities may be located.”<sup>37</sup>

Adversaries unsurprisingly seek to protect what they value. And, as Defense Secretary Harold Brown emphasized, US deterrence threats should be capable of holding at risk those assets valued by the opponent.<sup>38</sup> Consequently, to the extent that we hope to apply the “logic of deterrence” to rogue-state decision makers, the US capability to threaten that which they value located within protected bunkers may be important for deterrence; if North Korean and other rogue leaders demonstrate the value they attribute to assets via buried and hardened bunkers, the US capability to hold those types of targets at obvious risk of destruction may be an important deterrent threat to those leaderships. Highlighting the potential value of nuclear capabilities to do so hardly connotes a rejection of deterrence in favor of “war fighting” as often is claimed; to the contrary, it reflects an attempt to find plausible deterrence tools suited to contemporary opponents and conditions. This is precisely the point made with regard to deterring the Soviet leadership in 1989 by R. James Woolsey, who subsequently served as the director of central intelligence in the Clinton administration:

Successful deterrence requires being able to hold at risk those things that the Soviet leadership most values. The nature of the Soviet state suggests that the Soviet leaders most value themselves. This emphasizes the importance of being able to hold at risk deep underground facilities, such as those at Sharapovo, which can only be done effectively by an earth-penetrating [nuclear] weapon.<sup>39</sup>

A fundamental deterrence question regarding such US capabilities concerns which set of specific conditions is more likely to provide the United States with greater leverage: when opposing leaderships have, or do not have, sanctuaries impervious to US prompt threats. Are opponents likely to feel greater freedom to provoke the United States severely when they believe themselves to be *more* or *less vulnerable* to US deterrence threats?

There are no a priori answers to such questions that can be assumed to apply across a spectrum of opponents and circumstances. In contemporary cases, however, as in the past—if the complex variety of conditions

necessary for deterrence to work are present and the challenger is risk- and cost-tolerant—then *nuclear* deterrence *may be uniquely decisive* in the challenger's decision making. Moreover, for deterrence to work on those occasions—whether they are few or many—could be of great importance given the potential lethality of emerging WMD threats to the United States. To assert otherwise—that US nuclear weapons now provide *no* unique added value for deterrence—contradicts available evidence and lays claim to knowledge about opponent decision making that domestic commentators do not and cannot have. Such assertions reveal more about what some commentators *wish* to be true than what available evidence suggests should be believed.

There should be no presumption that nuclear threats always will make the difference between effective deterrence or its failure. The capability, however, to threaten an adversary's valued assets with great lethality and from afar—including well-protected targets—may be critical for some US deterrence purposes. Unless future leadership decision making is different from that of the past, in some cases *nuclear* threat options will contribute to deterrence. Given literally decades of experience, the burden of proof lies with those who now contend that nuclear weapons are unnecessary for deterrence; considerable available evidence contradicts such a contention.

The decisions of Britain and France also suggest the continuing value of nuclear weapons for deterrence. Both have reaffirmed their long-term commitments to maintaining their nuclear capabilities for deterrence purposes, including deterrence of rogue states and other possible future unexpected contingencies.<sup>40</sup>

Also indicative of the continuing deterrence value of nuclear weapons are Russia's and China's decisions to modernize and expand their nuclear arsenals<sup>41</sup> and the apparent desire of North Korea, Iran, and possibly Syria to possess nuclear weapons.<sup>42</sup> North Korean officials have pointed to the value of nuclear weapons for deterrence:

Today's reality verifies that the [North Korean] nuclear deterrent constitutes the one and only means that can prevent war on the Korean peninsula and defend peace in this region. . . . We will strengthen our nuclear deterrent in every way to prevent war and defend peace on the Korean peninsula and in Northeast Asia and will take a decisive self-defensive countermeasure at the necessary time.<sup>43</sup>

North Korea's nuclear weapons program is "an all-purpose cost effective instrument of foreign policy . . . the single most important lever in its asymmetric conflicts and negotiations with South Korea, the United

States, and Japan.”<sup>44</sup> So too, Iranian officials reportedly attribute great deterrence value to nuclear weapons. Following Iran’s costly war with Iraq in the 1980s, and the subsequent 1991 Gulf War,

Iranian leaders believed that nuclear weapons were the ultimate instrument of asymmetric warfare. They held that if Iraq had had nuclear weapons [in 1991], the United States would never have attacked it. Hence, in January 1995, Iran signed a contract with Russia for the completion of a nuclear power plant in the city of Bushehr, which . . . provided Iran with a pretext to begin building a complete fuel cycle, with the aim of producing enriched uranium for nuclear weapons.<sup>45</sup>

The material question is not whether commentators believe nuclear weapons “ought” to have value for deterrence in a normative sense; they *have* demonstrated that value. The question is whether we are willing to accept the risk of deterrence failure on those occasions in which the United States could not threaten nuclear escalation, possibly including threats to some adversaries’ highly valued/protected targets. The added risk of deterrence failure flowing from such an inability surely cannot be calculated a priori with precision. It may be nonexistent or high, depending on the specific circumstances of the contingency. Even if the risk of deterrence failure for this reason is low, however, the possibility would still deserve serious consideration because the consequences of a single failure to deter WMD attack could be measured in thousands to millions of US and allied casualties. And, of course, that risk may not be low.

### **The Value of Nuclear Weapons for Assurance**

Nuclear weapons also appear to have unique value for assurance. Particularly pertinent in this regard are the views of those allies who consider themselves dependent on the United States’ nuclear umbrella for extended deterrence. Former senior military officers from the United States, Germany, Britain, France, and the Netherlands, have emphasized the continuing importance of the *nuclear* escalation threat for deterrence: “The first use of nuclear weapons must remain in the quiver of escalation as the ultimate instrument to prevent the use of weapons of mass destruction, in order to avoid truly existential dangers.”<sup>46</sup>

Similarly, following the North Korean nuclear test in October 2006, Japanese and South Korean officials emphasized the importance they place on US *nuclear capabilities* for extended deterrence. Former South Korean defense ministers asked that US nuclear weapons removed from South

Korea in 1991 be returned, and public sentiment turned strongly in favor of South Korea having a nuclear weapons capability.<sup>47</sup> A South Korean delegation to the United States, led by Defense Minister Yoon Kwang-ung, sought an explicit public declaration that if North Korea employed nuclear weapons against South Korea, the United States would respond in kind as if the United States itself had been attacked.<sup>48</sup>

A 2006 Japanese study headed by former prime minister Yasuhiro Nakasone concluded that “in order to prepare for drastic changes in the international situation in the future, a thorough study of the nuclear issue should be conducted.”<sup>49</sup> Nakasone noted that Japanese security is dependent on US nuclear weapons, but that the future of the US extended deterrent is unclear. Japanese defense minister Fumio Kyuma was explicit regarding the nuclear requirements of extended deterrence. “The strongest deterrence would be when the United States explicitly says, ‘If you drop one nuclear bomb on Japan, the United States will retaliate by dropping 10 on you.’”<sup>50</sup> There could hardly be a stronger allied statement of the perceived value of US *nuclear* weapons for the continued assurance of allies or a more explicit *rejection* of US ambiguity in its extended deterrence commitments.

A Japanese commentary on the subject by Kyoto University professor Terumasa Nakanishi laments the “Chamberlainization” of the US extended nuclear umbrella for Japan and explicitly links related fears to the potential Japanese need for nuclear weapons:

With America not indicating that it will shore up its nuclear deterrence toward China and North Korea, if Japan is going to try to put an actual lid on the North Korean nuclear problem, private Japanese citizens, as “*sensible and prudent Japanese*,” should widen and deepen discussion from now on [about] the issue of how Japan can connect its independent national strategy and Japan’s own nuclear weapons and nuclear strategy to its foreign policy.<sup>51</sup>

The expressed definition here of what is a “sensible and prudent” course for Japan may be far different from the preferred US definition of the same.

The Iranian drive for nuclear weapons similarly appears to be leading some neighboring Arab states to anticipate *their own need for nuclear weapons*: “Just such a reaction is underway already in the Middle East, as over a dozen Muslim nations suddenly declared interest in starting nuclear-power programs. This is not about energy; it is a hedge against Iran. It could lead to a Middle East with not one nuclear-weapons state, Israel, but four or five.”<sup>52</sup>



That officials and commentators in key allied countries perceive great value in US nuclear weapons for extended deterrence suggests strongly that these weapons *do have unique assurance value*. There is a direct connection between allied perceptions of the assurance value of US nuclear weapons for extended deterrence and nuclear nonproliferation. There may seem to be an incongruity between the US maintenance of its own nuclear arsenal for deterrence and its simultaneous advocacy of nuclear nonproliferation; a prominent member of Congress has likened this seeming incongruity to a drunkard advocating abstinence. However, given the obvious importance of US nuclear weapons for its extended deterrence responsibilities and the critical role which US extended nuclear deterrence plays in nonproliferation, *there is no incongruity*. Sustaining US capabilities for extended nuclear deterrence is critical for nuclear nonproliferation.

Such allied commentary does not demonstrate directly the value of nuclear weapons for *deterrence*—again, it is US *opponents* who ultimately determine the deterrence value of US nuclear weapons. It is, however, significant evidence of the importance of US nuclear weapons for the assurance of allies via extended deterrence. It also is important to recognize that for North Korea's closest neighbors, including Japan and South Korea, the question of the value of US nuclear weapons is not an academic or theoretical debate about preferred utopian futures. It is a most serious concern among these Asian leaders who undoubtedly understand North Korea at least as well as US commentators. They believe that US nuclear weapons are critical to the deterrence of North Korea and thus their own assurance. These are only perceptions; their perceptions, however, may be particularly well-informed, and both deterrence and assurance fundamentally are about perceptions.

The apparent importance of US nuclear weapons for extended deterrence, assurance, and thus nonproliferation may distress US commentators who would prefer US deterrence threats to be largely or exclusively nonnuclear. Just as deterrent effect ultimately is determined by opponents, however, what does or does not assure allies is not decided by the preferences of US commentators, but by the allies themselves. The United States can decide what priority it places on the assurance of allies and how it will proceed to support that goal, but only the allies can decide whether they are assured. In the contemporary environment, available evidence suggests strongly that assurance is an important goal and that US *nuclear weapons* are critical to the assurance of key allies to a level they deem adequate.



The United States could decide to withdraw the nuclear umbrella and provide only a nonnuclear commitment. As discussed above, however, it is likely that the US withdrawal of its *nuclear* extended deterrent coverage would create new and powerful incentives for nuclear proliferation among its friends and allies who, to date, have felt sufficiently secure under the US extended nuclear deterrent to remain nonnuclear.<sup>53</sup> This linkage is not speculative; it is voiced by allies who feel increasingly at risk. Extreme care should be exercised before moving in a direction that carries the risk of unleashing a nuclear proliferation “cascade”—such as moving prematurely in the direction of a wholly nonnuclear force structure. As a 2007 report by the Department of State’s International Security Advisory Board concludes,

There is clear evidence in diplomatic channels that US assurances to include the nuclear umbrella have been, and continue to be, the single most important reason many allies have foresworn nuclear weapons. This umbrella is too important to sacrifice on the basis of an unproven ideal that nuclear disarmament in the US would lead to a more secure world . . . a lessening of the US nuclear umbrella could very well trigger a cascade [of nuclear proliferation] in East Asia and the Middle East.<sup>54</sup>

### **The Credibility of US Nuclear Threats: Implications for the Arsenal**

If we hope to apply the logic of punitive deterrence to an opponent in an acute contingency, then that opponent must attribute *some* credibility to our threats. Whether the intensity of that belief corresponds to Kahn’s favored threat that leaves *little* to chance, or to Schelling’s threat that leaves *something* to chance, the opponent must anticipate that there is *some probability* that the US threat would be executed.

In the past, militarists and dictators have seen in America’s Western and democratic scruples license to provoke the United States. These leaders have included Adolf Hitler, Hideki Tojo, Mao Zedong, Saddam Hussein, and Slobodan Milosevic.<sup>55</sup> Adolf Hitler frequently boasted that he was not limited by “bourgeois scruples” in the manner of liberal democracies and that this would help ensure his success. Or, as Slobodan Milosevic proudly declared, “I am ready to walk on corpses, and the West is not. That is why I shall win.”<sup>56</sup> Obviously, both Hitler and Milosevic misjudged their situations. However, their expectations that Western democratic norms would

provide the basis for their victory likely contributed to their willingness to provoke.

This point has implications for the US nuclear arsenal's value for deterrence. In some instances, low-yield, accurate nuclear weapons may contribute to a US deterrent threat that is *more believable* than otherwise would be the case. The US "legacy" nuclear arsenal's generally high yields and limited precision could threaten to inflict so many innocent casualties that some opponents eager to find a rationale for action may seize on the possibility that a US president would not execute an expressed nuclear deterrent threat. Uncertainty regarding the US threat in such cases could work against the desired deterrent effect.

America's aversion to causing "collateral damage" is well known. Some opponents clearly see proper US concerns about civilian casualties, "nation-building," and winning "hearts and minds" as US vulnerabilities to be exploited. They may disdain as particularly incredible deterrence threats based on the generally high nuclear yields of the US Cold War arsenal, given the civilian destruction which high yields could cause. The US desire to minimize unintended destruction, inspire postconflict support from an opponent's liberated populace, and pursue postconflict reconstruction may be priorities in the contemporary period that reduce the apparent credibility of Cold War-style assured destruction nuclear threats.<sup>57</sup> In these cases, US nonnuclear and very discriminate nuclear capabilities may be important for US deterrence credibility. During the Cold War—when US survival was at stake and the context involved thousands of nuclear weapons on each side—these types of considerations were likely to have been less pertinent to considerations of credibility. Now, however, they point toward the potential value of advanced nonnuclear and highly discriminate nuclear threat options for deterrence credibility. Some studies done late in the Cold War, and looking 20 years into the future, pointed to the same conclusion.<sup>58</sup>

Consequently, reducing nuclear yields and improving the accuracy of US nuclear forces may be important for contingencies in which nuclear deterrence is critical but new, post-Cold War priorities are in play. Again, this suggestion is not, as some commentators charge, a rejection of deterrence in favor of "destabilizing," "war-fighting" nuclear weapons. Such a characterization is to apply loaded Cold War deterrence labels to a context in which they lack *meaning*. The potential value of low-yield, accurate nuclear weapons is fully consistent with their possible deterrent effect.

US strategic policies guided by balance-of-terror and assured-destruction metrics subverted long-standing moral strictures against threatening civilians in favor of the goal of deterrence “stability.” In the contemporary era, however, when the stakes at risk for the United States in a regional crisis do not include national survival, and when postconflict reconstruction and minimization of damage to the opponent and its neighbors may be priority goals, the credibility of the US deterrent may rest *not on how much damage can be threatened* à la assured destruction, but rather on *how controlled is that threatened damage*. Traditional moral considerations and the efficacy of deterrence may now merge.

In short, as the apparent success of nuclear deterrence during the 1991 Gulf War illustrated, perceptions are key to deterrence. Nuclear threats may be important, but high nuclear yields and limited precision *may not* appear to constitute credible threats to opponents who understand US concerns about inflicting “collateral damage” and expect that US “self-deterrence” would provide them greater freedom of action. We should not want the relatively high yields and modest accuracies of the US Cold War legacy nuclear arsenal to give an opportunity for contemporary opponents to view US deterrence threats with disdain.

It does not require much foresight or imagination to conclude that—to *the extent that the logic of deterrence applies*—under plausible circumstances US threats may more readily serve deterrence purposes when US forces can hold enemy sanctuaries at risk with minimal unintended damage. Leaving uncontested an opponent’s potential belief that the United States would be incapable of threatening its sanctuaries, or would be “self-deterred” by enlightened scruples from executing its deterrence threats, may contribute to that opponent’s felt freedom to provoke the United States. This is not a far-fetched concern. Contemporary rogue states appear eager to exploit both mechanisms in the hope of escaping US deterrence constraints. In this context, capabilities dubbed “destabilizing” by traditional balance-of-terror categorization—such as precision accuracy and counterforce potential—may be important for deterrence. The old notion that a coherent distinction can be drawn between “stabilizing” forces intended to serve deterrence purposes and “destabilizing” forces for “war fighting” fits the old formula but does not fit these contemporary circumstances.

Finally, some commentators have opposed US development of nuclear weapons intended to limit collateral damage because they claim that US forces designed to do so would be considered by a president to be more

“useable,” thus “lowering the threshold” to US nuclear employment: “The implication is that, if their resulting collateral damage can be substantially reduced by lowering the explosive power of the warhead, nuclear weapons would be more politically palatable and therefore more ‘useable’ for attacking deeply buried targets in tactical missions—even in or near urban settings, which can be the preferred locales for such targets.”<sup>59</sup>

This critique posits that the United States should forego a capability that may be valuable for deterrence for fear that a president might employ it cavalierly. Such a trade-off is at least questionable, particularly given the absence of any history of such cavalier presidential behavior. In addition, because an opponent might consider a US nuclear deterrent threat to be *credible* does not also mean that it is regarded by presidents as easily employable—as was demonstrated during the 1991 Gulf War. A president’s decision calculus about the actual employment of nuclear weapons is likely to be affected by many factors, particularly including the severity and circumstances of the provocation, other priority US goals, allied considerations, immediate foreign and domestic political circumstances, and personal moral perspectives. The manifest characteristics of US weapons may be more salient to an opponent’s *view* of US credibility than it is to a president’s view of their usability. A president’s perceptions of *useable* and opponents’ views of *credible* need not be conflated.

Can there be confident promises that more “discriminate” US nuclear capabilities would strengthen US deterrence efforts or make the difference between deterrence working or failing on any given occasion? *No; of course not.* In the absence of a specific examination of opponent and context, we are dealing again in speculative generalizations about how deterrence may operate. The particular types of nuclear capabilities necessary to threaten opponents’ deeply buried bunkers and other targets, while minimizing the potential for collateral damage, could provide the needed lethality and credibility for deterrence on occasion. However, an opponent also could miss such fine points regarding US nuclear capabilities, or be so motivated that the specific character of the US nuclear threat is irrelevant to its decision making. What can be said is that—unless a close examination of opponents suggests otherwise—these types of specialized nuclear capabilities *cannot reasonably be touted as ensuring deterrence credibility* or *dismissed a priori* as destabilizing and intended for war-fighting vice deterrence purposes. In the contemporary environment they may be intended for and well-suited to the political goals of deterrence and assurance.

## **The Nuclear Disarmament Vision**

Throughout the Cold War and post-Cold War years, various groups and individuals have put forth initiatives for the long-term elimination of nuclear weapons or their near-term reduction to small numbers. With the end of the Cold War, many thoughtful people understandably question why the United States should continue to maintain nuclear weapons, particularly if most plausible adversaries can be defeated militarily with conventional forces alone. The point here is that, on some occasions, deterrence and assurance will be the priority goals. Numerous countries—including contemporary opponents and allies—give every indication that they perceive unique value in nuclear weapons for those purposes, whether or not US domestic commentators believe it or want it to be true. Those perceptions alone create the potential value of nuclear weapons for deterring opponents and assuring allies.

A common problem with recent and past nuclear disarmament initiatives is that they emphasize the risks of maintaining US nuclear capabilities, but are silent or wholly superficial in discussing the risks of their elimination. The postulated benefit from US moves toward giving up nuclear capabilities typically is presented in terms of the contribution such a move supposedly would make to the goal of nuclear nonproliferation.<sup>60</sup> US steps toward global nuclear disarmament supposedly will begin the action-reaction process of eliminating those nuclear threats that justify retaining US nuclear weapons for deterrence: no such threat, no such need. As I have argued elsewhere, the traditional balance-of-terror's simplistic action-reaction process is utterly inadequate for contemporary strategic conditions. Whatever the merit of that metaphor for this application, however, the question of nuclear disarmament must include a net assessment—a review of the value of nuclear weapons and the related downside of losing that value.

The burden of proof is on those who now assert that adversaries would be deterred reliably by US nonnuclear capabilities; that allies similarly would be assured reliably by the same; that opponents dutifully would follow the US example; and, that the United States could be confident they had done so. *Considerable evidence points to the contrary in each case.* In 2006, British prime minister Tony Blair made this point against those questioning his decision to modernize Britain's nuclear capabilities:

Those who question this decision need to explain why [nuclear] disarmament by the UK would help our security. They would need to prove that such a gesture would change the minds of hardliners and extremists in countries which are developing

these nuclear capabilities. They would need to show that terrorists would be less likely to conspire against us with hostile governments because we had given up our nuclear weapons. They would need to argue that the UK would be safer by giving up the deterrent and that our capacity to act would not be constrained by nuclear blackmail by others.<sup>61</sup>

Blair's critics and their US counterparts who now advocate that the United States embrace the "vision" of nuclear disarmament *have not begun* to offer a plausible net assessment in response to this challenge. Instead, they appear satisfied to assert the old action-reaction/inaction-inaction balance-of-terror adage, along with the equally dubious claim—also derived from the old formula—that deterrence now can be orchestrated to work reliably with nonnuclear forces alone. Both assertions can be described as reflecting hope over considerable evidence.

There are conditions that should be considered critical milestones for any significant US steps toward nuclear disarmament. The realization of some of those conditions would represent a more dramatic restructuring of international relations than has occurred since the 1648 Peace of Westphalia. This should not preclude creative thinking about prudent steps toward greatly reduced reliance on nuclear weapons, but it certainly should make us wary of embracing the vision of nuclear disarmament as a practicable goal in the absence of such dramatic change.

For example, one of the reasons nuclear deterrence has been valuable is that it appears to have disciplined the behavior of some states that otherwise could not be trusted to behave peaceably. Not all states are trustworthy, and it is those untrustworthy states with hostile designs that often pose security challenges; they are called "rogues" for a reason. In the past, such untrustworthy governments included Hitler's Germany and Stalin's Soviet Union; now they include the governments of Iran, North Korea, and Syria. These particular rogue leaderships may come and go, but in the future, there will be comparably untrustworthy leaderships with hostile intent. This is pertinent because there is *no indication* that, in a world of sovereign states, adequate international verification and enforcement measures will be available to backstop nuclear disarmament, much less the elimination of CBW. Most experience points to the contrary.

The Clinton administration's thoughtful undersecretary of defense for policy, Walter Slocombe, observed rightly in this regard that if "somehow" all of the pertinent powers of the world were to accept the vision of nuclear disarmament, its realization would demand "a verification regime of extraordinary rigor and intrusiveness. This would have to go far be-



yond any currently in existence or even under contemplation.”<sup>62</sup> Secretary Slocombe noted that the challenge to establishing the necessary verification regime should be obvious—it would have to include “certain and timely” procedures for “forcible” international action to ensure compliance.<sup>63</sup> In the absence of a trustworthy authority with much of the power and prerogative of a world government, such a verification and enforcement regime cannot exist. The enduring lack of reliable verification and enforcement—combined with the likelihood that some states will be untrustworthy, armed, and aggressive—explains why disarmament visions must remain visions in a world of sovereign states.

There are real risks associated with the possession of nuclear weapons. Great risk also may be expected if the United States and its allies were to give up nuclear weapons in the mistaken belief that untrustworthy, hostile states no longer could pose WMD threats. The same hostility and lack of trust inherent in international relations which creates the need for nuclear deterrence prevents the realization of visionary solutions to end that need.<sup>64</sup>

Other than the occasional, unpromising call for world government,<sup>65</sup> the proponents of nuclear disarmament *have not begun* to suggest how this sturdy barrier to the realization of their vision and like visions in past centuries may be breached while maintaining US security and the security of allies. We all would like to hear and to believe, but no plausible answer is offered.

In his final speech to the US Congress, Winston Churchill warned, “Be careful above all things not to let go of the atomic weapon until you are sure and more than sure that other means of preserving peace are in your hands!”<sup>66</sup> There is no known basis for concluding that those “other means” are at hand or that threats to peace will disappear. Until then, embracing nuclear disarmament seriously as the priority US goal *should be recognized as entailing the serious risk of further vilifying those US forces that may be important to deter future war, assure allies, and help contain nuclear proliferation.*

### **Balance-of-Terror Tenets versus Plausible Deep Nuclear Force Reductions**

Not all visions offer a wise path forward. Karl Marx’s slogan “From each according to his ability, to each according to his needs” was a beautiful



vision borrowed from Scripture. Attempts to realize that vision in the Soviet Union instead produced misery for millions and probably set back Russian economic development by half a century.

The vision of zero nuclear weapons appears beautiful.<sup>67</sup> Yet, were the United States to pursue that vision as its priority goal, it could degrade the deterrence of war and the assurance of allies. In contrast, these same risks do not *necessarily* apply to deep reductions in the US strategic nuclear arsenal. Deep nuclear reductions could be consistent with continued support for US strategic goals in a dynamic strategic environment—which is why they could be undertaken prudently in select circumstances.<sup>68</sup>

The continuing undisciplined application of the balance-of-terror tenets to contemporary questions of strategic forces and policy, however, will likely *preclude the opportunity for prudent deep nuclear force reductions*. As applied, those tenets *work against* the US policies and capabilities that could otherwise help to mitigate the risks associated with deep nuclear reductions and thus help to make them acceptable to US leaders responsible for “the common defense.”

The character and size of the US nuclear arsenal should be paced by numerous factors, including:

- the contemporary, highly dynamic strategic threat environment;
- the relationship of the nuclear arsenal to other national goals (e.g., nonproliferation);
- the goals the nuclear arsenal is intended to serve and their priorities, including assurance and deterrence;
- the potential contributions to those goals by other nonnuclear and nonmilitary means; and,
- budget and technical realities.

The United States cannot control all of these factors with any predictability, but it can influence some. When the alignment of these conditions presents the opportunity for prudent deep nuclear reductions, that opportunity should be pursued smartly. The Bush administration’s 2002 Treaty of Moscow, for example, contained a two-thirds reduction in the permitted number of operationally deployed strategic nuclear weapons—from the 6,000 weapons permitted by the 1991 START I treaty to a range of 1,700 to 2,200 weapons. At the time of the Moscow Treaty, Bush administration officials publicly identified *the new and more cooperative relationship with*

*the Russian Federation* as enabling such dramatic reductions.<sup>69</sup> The then-emerging improvement in political relations with Russia on a broad scale permitted deep reductions in the US strategic nuclear arsenal. This potential for deep reductions was *not the result of negotiations for that purpose* but a basic shift in political relations. US officials at the time also stated explicitly that *deeper reductions were possible in the future as conditions permitted*.<sup>70</sup>

What might contribute to the opportunity for further prudent reductions? In 2002, Bush administration officials included the development of US advanced nonnuclear forces and defensive capabilities as possibly doing so.<sup>71</sup>

Developments in US nonnuclear offensive weapons and damage-limitation capabilities could plausibly contribute to prudent reductions by helping to mitigate the possible risks of deep reductions and by providing nonnuclear offensive and defensive capabilities to perform some duties reserved to nuclear weapons in the past.<sup>72</sup> Significant damage-limitation capabilities, for example, could help to reduce a risk particularly associated with very low nuclear force numbers: they could help to make US security *less vulnerable* to dangerous technical and geopolitical surprises, including deception by countries that had ostensibly agreed to deep reductions and thereby contributed to the freedom felt by the United States to do so.

In addition, the responsiveness of the US nuclear and strategic forces production infrastructure in principle could help mitigate another of the primary risks involved in deep reductions—if the conditions permitting deep reductions shift and reestablish the requirement for an increase in the US arsenal's quantity or quality. The risk of being caught short in a dynamic environment may be eased by retaining a stockpiled reserve of nuclear weapons, *or via the US capability to respond and adapt with new nuclear weapons in a timely way without relying on an inventory of stockpiled weapons*. This latter possibility follows simply from the principle that the United States may not need to have on hand or stockpiled a redundant reserve of nuclear forces *if* they can be produced reliably in a timely fashion: the more reliably, rapidly, and credibly the United States can reconstitute forces in a shifting threat environment, the lower the need to rely on existing inventories of stockpiled or deployed weapons. Consequently, the freedom to reduce nuclear weapons deeply ironically may benefit from the US capability to restore nuclear forces as flexibly and rapidly as may be required by changes in the factors that pace US requirements.

In short, the pacing factor most under US control—that is, the character of US strategic capabilities and nuclear production infrastructure—may help contribute to the realization of deep nuclear force reductions. This could be accomplished by reducing the demand for deployed or stockpiled nuclear weapons and by mitigating the risks that otherwise could be associated with deep reductions—particularly including risks of surprising behavior by opponents and the need to adjust rapidly to changes in the threat environment.

The continuing, mechanical application of balance-of-terror idioms and tenets to contemporary questions of US deterrence strategy and strategic policies will *undercut US policies and capabilities that could facilitate the opportunity for further prudent deep nuclear reductions*. Why? First, the balance-of-terror formula focuses obsessively on calculating the number and type of deployed nuclear weapons considered adequate for “stable” deterrence. Long-term linear planning around that number—and setting successively lower arms-control limitations—work against the flexibility to shift and adapt strategy and capabilities as necessary per the threat conditions that pace actual need. If history were fixed or proceeding reliably in a straight line toward greater amity and peace, the lack of flexibility embedded in the balance-of-terror formula might be acceptable. There is little evidence, however, of such a happy trajectory.

Second, the contemporary action-reaction proposition that a manifest US capability for “new” nuclear weapons production should be rejected because it will drive nuclear proliferation argues against having the type of viable nuclear production infrastructure that could help the United States adjust as necessary to changes in the threat environment *without relying on inventories of deployed or stockpiled weapons*. Similarly, the traditional “instability” arguments now leveled against nonnuclear strategic forces may reduce the potential for the development and deployment of nonnuclear strategic weapons that could permit less reliance on nuclear weapons.

Third, the traditional balance-of-terror presumption against supposedly “destabilizing” damage-limitation capabilities could keep US vulnerability to the risk of surprise too high for the prudent implementation of much deeper reductions, even if the environment is so conducive. And, at very low numbers the presumption against discriminate, counterforce offensive forces could preclude strategic capabilities important for effective deterrence in plausible circumstances.

In summary, the balance-of-terror formula and tenets tend to be inconsistent with the flexibility and adaptability of US policy and forces that could contribute to prudent, deep nuclear reductions given a permissive threat environment. Sharp opposition to past US policy initiatives for greater flexibility typically followed the balance-of-terror narrative, including the critiques of the 1974 “Schlesinger Doctrine” (NSDM-242) and Secretary Brown’s 1980 “countervailing strategy” (PD-59). And, as is discussed below, the Bush administration’s 2001 Nuclear Posture Review (NPR) endorsed deep nuclear reductions, the possibility for further, deeper nuclear reductions, and *each of the capabilities described briefly above that could facilitate further prudent reductions*. Yet these NPR initiatives ran afoul of the continuing power of the same balance-of-terror narrative and have largely been stymied as a result.

### **The 2001 Nuclear Posture Review: A Self-Conscious Step toward Prudent Deep Reductions**

The Bush administration’s 2001 NPR was mandated by Congress to examine the roles and value of US strategic forces in the post–Cold War strategic environment, particularly including nuclear weapons.<sup>73</sup> It identified several avenues to strengthen deterrence, including the need to understand opponents better so that the United States can “tailor its deterrence strategies to the greatest effect.”<sup>74</sup> The NPR correspondingly emphasized the need for a wide spectrum of capabilities—conventional and nuclear, offensive and defensive—to support the tailoring of US deterrence strategies against a diverse set of potential contingencies and opponents.<sup>75</sup>

Senior US officials emphasized that the NPR firmly embraced deterrence as a continuing fundamental US goal,<sup>76</sup> and that it focused on deterring post–Cold War threats including, in particular, those posed by WMD proliferation.<sup>77</sup> Secretary of Defense Rumsfeld’s unclassified “Foreword” to the *NPR Report* specified that its policy direction was designed to “improve our ability to deter attack” while reducing “our dependence on nuclear weapons” for deterrence and placing greater weight on *non-nuclear* strategic capabilities.<sup>78</sup> Correspondingly, it emphasized the need for flexibility in US strategic force sizing as necessary to meet the needs of a variety of possible future threat conditions, and delinked the sizing of US nuclear force levels from those of Russia, which *was not considered an immediate threat*.<sup>79</sup> It concluded that the immediate deterrence role for

US nuclear weapons could be met with far fewer deployed nuclear forces and that US nuclear requirements could recede further as advanced non-nuclear weapons and defenses matured.<sup>80</sup>

In addition, Secretary Rumsfeld specified that a potential problem with the extant nuclear arsenal was its combination of relatively modest accuracy and large warhead yields.<sup>81</sup> The NPR pointed to the potential for low-yield, precision nuclear threat options and the ability to hold hard and deeply buried targets at risk to improve US deterrence capability and credibility.<sup>82</sup> Correspondingly, the NPR called for the US capability to “modify, upgrade or replace portions of the extant nuclear force or develop concepts for follow-on nuclear weapons systems better suited to the nation’s needs.”<sup>83</sup>

Finally, as mentioned above, the NPR concluded that the new relationship with Russia permitted the United States to reduce by approximately two-thirds its deployed strategic nuclear warheads from the START I ceiling of 6,000,<sup>84</sup> and that the requirements for nuclear weapons might be reduced further still as US nonnuclear and defensive capabilities advanced.<sup>85</sup> Senior Department of Defense officials specified that the NPR’s sizing of strategic nuclear warheads at 1,700–2,200 did *not* include Russia as an immediate threat.<sup>86</sup> As Undersecretary of Defense Douglas Feith said in open testimony, “We can reduce the number of operationally deployed warheads to this level because . . . we excluded from our calculation of nuclear requirements for immediate contingencies the previous, long-standing requirements centered on the Soviet Union and, more recently, Russia. This is a dramatic departure from the Cold War approach to nuclear force sizing.”<sup>87</sup> Force sizing instead was calculated to support the *immediate* requirements for deterrence and to contribute to the additional goals of assuring allies, dissuading opponents, and providing a hedge against the possible emergence of more severe, future military threats or severe technical problems in the nuclear arsenal.<sup>88</sup>

The NPR intentionally moved beyond the balance-of-terror formula that reduces US strategic nuclear force sizing to the familiar deterrence calculation of US warheads and opponents’ targets. This was not unprecedented. Former secretary of defense Schlesinger discussed his 1974 “essential equivalence” metric for strategic forces as intended to contribute to allied and enemy *perceptions* of overall US strength.

The NPR also walked away from the balance-of-terror tenet that societal protection is useless, unnecessary, and “destabilizing.” Instead, Secretary

Rumsfeld tied ballistic missile defense (BMD) deployment directly to denial deterrence and improved crisis-management options, in addition to providing possible relief against the failure of deterrence: “. . . active and passive defenses will not be perfect. However, by denying or reducing the effectiveness of limited attacks, defenses can discourage attacks, provide new capabilities for managing crises, and provide insurance against the failure of traditional deterrence.”<sup>89</sup> The subsequent formal announcement in December 2002 by Pres. George W. Bush that the United States would deploy strategic BMD against limited offensive missile threats was perhaps the most visible break from long-standing balance-of-terror policy guidelines.

Finally, the NPR endorsed a “responsive” industrial infrastructure to help provide the basis for flexible and timely adjustment of US strategic capabilities to technological and geopolitical developments. Again, a goal was to ease the requirement for deployed or stockpiled nuclear weapons; as increased reliance could be placed on a responsive industrial infrastructure to allow necessary adjustment to shifting technical or political conditions, there could be less reliance on deployed and nondeployed reserve warheads.<sup>90</sup>

In summary, the NPR established force sizing metrics that took into account US national goals in addition to deterrence. It recognized the potential for deep force-level reductions, given the new relationship with Russia, and sought to mitigate the risks of those reductions (and possible future, deeper reductions) by establishing a flexible, adaptable approach to force deployments, promoting strategic nonnuclear forces and defenses, and establishing a responsive industrial infrastructure that could reduce reliance on the maintenance of deployed and stockpiled nuclear weapons.

### **Another Balance-of-Terror/Assured-Destruction Counterreformation: Two Steps Back**

Key commentators and members of Congress from both parties were unsympathetic to the NPR and its recommendations, some decidedly so. Responses to the NPR reflected both misunderstanding of its content and the long-familiar points of opposition to *any* strategic policy initiative departing from balance-of-terror and assured-destruction orthodoxy, whether from Democratic or Republican administrations.

Opposition to the NPR mirrored the sharp criticism of both NSDM-242 and PD-59. In each case, criticism followed from the familiar balance-of-terror/assured-destruction formula: support for multiple US nuclear threat



options and the endorsement of modest counterforce strategic capabilities supposedly was the work of nuclear “war-fighting” hawks who rejected deterrence.

Commentators who continued to calculate US strategic force requirements via the Cold War’s arithmetic formula dismissed the official claim that Russia was *not included* in the NPR’s 1,700–2,200 range of strategic warheads. They simply could not fathom how the standard deterrence formula of counting US warheads and opponents’ targets could result in the range of 1,700–2,200 warheads *unless* Russia continued to be included as the immediate threat to be deterred.<sup>91</sup> As noted above, however, that balance-of-terror formula was not the NPR’s measure; the old metrics simply could not take into account the requirements stemming from the multiple national goals of assurance, deterrence, and dissuasion that were included in the NPR.<sup>92</sup>

In addition, pointing to uncertainty in the functioning of deterrence and recommending damage-limitation measures as a hedge against that uncertainty challenged the core balance-of-terror tenets. When the NPR recommended a defensive hedge and a spectrum of offensive capabilities—nuclear and nonnuclear—to strengthen deterrence, the old labels of “war-fighting” and “destabilizing” could not be far behind.

Commentators’ applications of the familiar Cold War formulas and metrics to the NPR’s initiatives led inevitably to the erroneous conclusion that the NPR’s recommendations reflected a rejection of deterrence in favor of a “destabilizing,” “war-fighting” strategy.<sup>93</sup> One commentator’s assessment was typical in this regard: “Throughout the nuclear age, the fundamental goal has been to prevent the use of nuclear weapons. Now the policy has been turned upside down. It is to keep nuclear weapons as a tool of war-fighting rather than a tool of deterrence.”<sup>94</sup> Precisely the same charge was leveled at NSDM-242 and PD-59, despite the fact that neither they nor the NPR fit such a description.<sup>95</sup>

The NPR’s embrace of strategic BMD also predictably brought charges of instability and the action-reaction “law” back into play: “Not only did this action destroy the arms reduction process . . . it made inevitable the next round of arms escalation. Missile defense began as Ronald Reagan’s fantasy . . . . The resuscitation of the fantasy of missile defense, and with it the raising from the dead of the arms race, may result in catastrophes in comparison to which [the war in] Iraq is benign.”<sup>96</sup>



This narrative on the NPR—derived wholly from the Cold War’s balance-of-terror standards and terms of art—reverberated first within the United States and then abroad. With that, critics could cite each other as authoritative validation of their interpretation and critiques of the NPR.

A similar application of Cold War norms to the NPR was seen in most congressional commentary and opposition. Consequently, much of the NPR’s recommended strategic force program has *not* been pursued. Former senior Pentagon official Tom Scheber has observed in this regard, “*Little progress* has been made on plans to develop and field prompt, conventional global strike [capabilities] and to modernize the nuclear force. In addition, initiatives to modernize the nuclear warhead research and production infrastructure and restore functionality have not progressed substantially.”<sup>97</sup>

This opposition was made more enduring and salient than might otherwise have been the case by the Bush administration’s relatively modest efforts to present and explain the NPR publicly. In comparison to previous major initiatives in strategic policy—including NSDM-242 and PD-59—there was considerably less apparent public effort by the White House and the Department of Defense to make the case that the new realities of the twenty-first century demanded the approaches to deterrence and strategic forces presented in the NPR.

A critique based on the Cold War’s balance-of-terror orthodoxy was inevitable, even had there been a vigorous effort on the part of officials to present and explain the NPR. That critique has greeted every attempted policy departure from orthodoxy since the 1960s; it constitutes the baseline of accepted wisdom about deterrence and strategic forces for many in the United States. The combination of decades-long familiarity with the idioms and standards of the “stable” balance-of-terror/assured-destruction model, and a limited public effort by the administration to explain the NPR, virtually ensured that the familiar critique based on past terms and definitions would become the accepted public narrative on the NPR. That narrative, in turn, became the basis for congressional opposition.

In addition, and unsurprisingly, there were extreme-sounding commentaries on the NPR that appeared to be driven by partisan politics. For example, Dr. Helen Caldicott, a cofounder of Physicians for Social Responsibility, provided the following crude, politically partisan commentary during the lead-up to the 2004 presidential elections: “My prognosis is, if nothing changes and Bush is reelected, within ten or twenty years, there will be no life on the planet, or little.”<sup>98</sup> Similarly, a *Los Angeles Times*

commentary told of “a hawkish Republican dream of a ‘winnable nuclear war’” that threatened a “nuclear road of no return,” and that “could put the world on a suicidal course.”<sup>99</sup> Another asserted, “With Strangelovian genius” the NPR “puts forth chilling new contingencies for nuclear war.”<sup>100</sup> Such descriptions were pure hyperbole, of course, but—presented with the appearance of insight—they were frightening hyperbole.

Leaving such extreme commentary aside, most of the reasoned critique of the NPR was based on standard balance-of-terror/assured-destruction formulas and definitions. This was again apparent during the congressional debate over RNEP. Congressional critics objected to it as being the “action” that would inspire the “reaction” of nuclear proliferation and to RNEP’s putative “war-fighting” capability, claiming it to be “destabilizing” and contrary to deterrence.

When Cold War measures of merit are applied in such a fashion to a decidedly post-Cold War strategic policy initiative, that initiative can only be deemed unacceptable; the NPR’s recommendations were sure to be described as a rejection of deterrence, by definition, because the NPR did not follow the familiar balance-of-terror formula and related strategic force standards and goals. The critique was understandable on its own terms but correspondingly missed the greater reality. The NPR’s departure from balance-of-terror orthodoxy did not reflect a rejection of deterrence; it was, instead, an intentional step away from the definition of deterrence and measures of US strategic force adequacy created during and for increasingly distant Cold War conditions.<sup>101</sup> It sought to identify the minimal level of nuclear capability consistent with multiple US strategic goals in a new and dynamic strategic environment. And, in doing so, it recommended a two-thirds reduction in forces and a series of measures to mitigate the risk of such deep nuclear reductions—leaving open the possibility of further nuclear cuts.

The irony here is that the typical critiques of the NPR charged that it was a throwback to Cold War thinking when, in fact, those very critiques sprang from the vintage balance-of-terror narrative. Commentators responded yet again on the basis of past strategic measures and, unsurprisingly, found the NPR in violation of the definitions, terms, and metrics of that old, favored, Cold War deterrence formula—as if that formula continues to be coherent in conditions so different from those which gave it intellectual life.

The NPR was neither beyond critique nor the final word in “new thinking” about strategic forces and policy. Useful commentary, however, now can only be based on recognition that our thinking about deterrence, defense, and strategic forces must adapt to the new realities of the twenty-first century. The NPR’s drive to help create conditions suitable for prudent nuclear reductions instead was challenged by traditional Cold War standards and idioms that now have little meaning or value.

### **Still Holding the Horses**

There is an anecdote, perhaps true, that early in World War II the British, in need of field pieces for coastal defense, hitched to trucks a light artillery piece with a lineage dating back to the Boer War of 1899–1902.<sup>102</sup> When an attempt was made to identify how gun crews could increase its rate of fire for improved defense, those studying the existing procedure for loading, aiming, and firing noticed that two members of the crew stood motionless and at attention throughout part of the procedure. An old artillery colonel was called in to explain why two members of a five-member crew stood motionless during the process, seemingly doing nothing useful. “Ah,” he said. ‘I have it. They are holding the horses.’”<sup>103</sup> There were, of course, no longer any horses to hold, but the crew went through the motions of holding them nonetheless. The author of this anecdote concludes that the story “suggests nicely the pain with which the human being accommodates himself to changing conditions. The tendency is apparently involuntary and immediate to protect oneself against the shock of change by continuing in the presence of altered situations the familiar habits, however incongruous, of the past.”<sup>104</sup>

The continued application of the balance-of-terror tenets as guidelines for US strategic policy is akin to holding on to nonexistent horses. The expectation of well-informed, “rational” (i.e., prudent/cautious) opponents, and the related expectation that the absence of “suicidal” decision making must lead inevitably to the predictable, mechanical functioning of deterrence, are weak reeds upon which to base US policy, as they were during the Cold War. Former defense secretary Robert McNamara has stated that deterrence did not fail catastrophically at the time because “we lucked out.”

Today, it is even more dangerous to expect the functioning of deterrence to be predictable, easily understood, achieved, and manipulated. Holding on to such unwarranted expectations virtually ensures that the next failure

or irrelevance of deterrence will come as a surprise and that the United States simultaneously will dawdle in pursuing critical defensive/preventive measures and avoid the hard work necessary to strengthen deterrence to the extent feasible.

The NPR reflected a transformation in thinking about deterrence and strategic forces brought about by the dramatic change in conditions from those of the Cold War. Its basic recommendations were reasonable, prudent steps to align better our strategic policies and forces to the realities of the new era:

- Broadening the range of US strategic goals that define the adequacy of US strategic forces.
- Expanding US deterrent threat options.
- Emphasizing the deterrent role for nonnuclear options.
- Raising concern about the uncertainty of deterrence and the credibility of the inherited Cold War nuclear arsenal for some contemporary deterrence purposes.
- Seeking an improved understanding of opponents and their intentions, and the flexibility to tailor deterrence to the specific requirements of foe, time, and place.
- Moving beyond the balance of terror as the measure of our deterrence and strategic force requirements.
- Placing a new priority on the US capability to limit damage in the event of deterrence failure or irrelevance.

In due course, the fact that continuing faith in fixed Cold War models, terms, and metrics has stymied the NPR's implementation will be a historical footnote—one with possibly lasting effect. The important question to consider now, however, is not the fate of the 2001 NPR, but rather the fate of future reviews and efforts to better align US strategic policy and requirements with the reality of multiple and diverse opponents, WMD proliferation, and dynamic threat conditions. Many of the basic contours of US strategic policy goals taken into account by the NPR are likely to endure—particularly including the need to deter multiple threats, assure understandably nervous allies, and provide protection against various forms and sizes of attack, including limited nuclear and biological attacks. Future reviews of US strategic policy will confront the same questions of

how US strategies and strategic forces can help support these goals in an unpredictable, dynamic threat environment. The continued application of Cold War strategic orthodoxy to those questions will prevent any plausibly useful set of answers. The balance-of-terror tenets, as applied, serve largely to buttress a political agenda of stasis that actually works *against* the very steps that could facilitate the realignment of the US nuclear arsenal and policy with contemporary realities—including the potential for prudent, deep nuclear force reductions.

It is time to move on from the enticing convenience and ease of the brilliant and innovative theoretical strategic framework of the Cold War. That framework is traceable to hubris, unwarranted expectations, and the need for convenience and comfort, however false. It is based on hopes that are beyond realization and conditions that no longer exist. Outside of the unique Cold War standoff that gave it a semblance of coherence, the balance-of-terror lodestar will be a continuing source of dangerous and confused policy guidance. ❧

## Notes

1. The increased importance that US officials attribute to these goals is elaborated in Sharon Behn and Seth Rosen, "US Urged to Focus More on Nation-Building," *Washington Times*, 28 July 2005, 15.

2. Daryl Kimball, "Of Madmen and Nukes," *Arms Control Today* 35, no. 9 (November 2005): 3, <http://www.armscontrol.org/act/2005>. See also, Wolfgang Panofsky, "Nuclear Insecurity: Correcting Washington's Dangerous Posture," *Foreign Affairs* 86, no. 5 (September/October 2007): 109–10.

3. Les Aspin, *Annual Report to the President and the Congress* (Washington, DC: US Government Printing Office [GPO], January 1994), 61.

4. Paul Nitze, "Is It Time to Junk Our Nukes?" *Washington Post*, 16 January 1994, C-1.

5. Kimball, "Of Madmen and Nukes."

6. See statements by Assistant Secretary of Defense J. D. Crouch in Tom Squitieri, "Bush Pushes for Next Generation of Nukes," *USA Today*, 7 July 2003, 1.

7. See, for example, David Ruppe, "Republican Lawmaker Slams Bush Nuclear Plans," *Global Security Newswire*, 4 February 2005, [http://www.nti.org/d/newswire/issues/2005\\_2\\_4.html](http://www.nti.org/d/newswire/issues/2005_2_4.html). See also, Jonathan Medalia, "Bunker Busters": *Robust Nuclear Earth Penetrator Issues, FY 2005–FY 2007*, updated 21 February 2006 (Washington, DC: Congressional Research Service, 2006), 9.

8. Congressman David Hobson, quoted in Jim Woolf, "US Drive for Nuclear 'Bunker Buster' Bomb Boosted," *Reuters.com*, 3 February 2005.

9. Pres. George H. W. Bush stated that "one of my big worries as commander-in-chief, which was shared by our military, was the fact that he might use chemical weapons. . . . We lived in fear of it." President Bush in *A Gulf War Exclusive: President Bush Talking With David Frost*, transcript no. 51, 16 January 1996, 5. Gen H. Norman Schwarzkopf, commander in chief of coalition forces, and Gen Walt Boomer, commander of US Marines, also anticipated Iraqi

chemical use. See their statements in *Frontline*, no. 1408, The Gulf War Part II, 10 January 1996 transcript, 3–4. See also, Youssef M. Ibrahim, “Israel Expecting Missiles from Iraq in Case of a War,” *New York Times*, 1 January 1991, 1.

10. See the discussion in Moshe Arens, *Broken Covenant* (New York: Simon and Schuster, 1995), 201. See also, Sen. Arlen Specter, “Statistics on Missile Scud Attacks on Israel,” *Congressional Record—Senate*, 5 March 1991, S2689.

11. R. Jeffrey Smith, “U.N. Says Iraqis Prepared Germ Weapons,” *Washington Post*, 26 August 1995, A-1. For a comparison of the lethality of conventional, chemical, biological, and nuclear weapons see, Steve Fetter, “Ballistic Missiles and Weapons of Mass Destruction: What Is the Threat? What Should Be Done?” *International Security* 16, no. 1 (Summer 1992): 27.

12. Presentation by Dr. William Shuler, deputy for counterproliferation, Office of the Assistant to the Secretary of Defense for Atomic Energy, 13 December 1995, Seventh Annual SO/LIC Symposium, Washington, DC.

13. Akiva Eldar, “‘Saddam Would Have Reason to Worry,’ Says Arens When Asked about Unconventional Weapons,” *Haaretz*, 4 February 1991, 1.

14. As discussed by Shai Feldman of Tel Aviv University’s Jaffee Center for Strategic Studies and Amatzia Baram of Haifa University in their respective papers presented at the conference, “Regional Stability in the Middle East: Arab and Israeli Concepts of Deterrence and Defense,” hosted by the US Institute of Peace, 17–19 June 1991, Washington, DC.

15. See the discussion in Tim Trevan, “Inside Saddam’s Death Lab,” *Sunday Times* (London), 14 February 1999, [www.sunday-times.co.uk/news/pages/sti/99/02/4](http://www.sunday-times.co.uk/news/pages/sti/99/02/4); Tim Trevan, *Saddam’s Secrets: The Hunt for Iraq’s Hidden Weapons* (North Pomfret, VT: Harper Collins, 1999), 45; and Keith B. Payne, *Deterrence in the Second Nuclear Age* (Lexington: University Press of Kentucky), 81–87.

16. *Baghdad INA*, 9 January 1991, translated and presented in “INA Reports Minutes of Aziz-Baker Meeting,” FBIS-NES-92-009, 14 January 1992, 27.

17. Reprinted in *US Department of State Dispatch, Persian Gulf*, no. 2, 14 January 1991, 25.

18. *Public Statements of Richard B. Cheney, Secretary of Defense*, vol. 4 (Washington, DC: Historical Office, Office of the Secretary of Defense, 1990), 2547.

19. Smith, “U.N. Says Iraqis Prepared Germ Weapons,” A-19.

20. Statement by Gen Wafic Al Sammarai, “The Gulf War, Part I,” *Frontline* no. 1407, 9 January 1996 transcript, 12.

21. Statements by General Al Sammarai in *Frontline*, “The Gulf War, Parts I and II,” 9–10 January 1996 (emphasis added). Comprehensive background interviews available at [www.wgbh.org](http://www.wgbh.org). See also, Trevan, “Inside Saddam’s Death Lab,” and Trevan, *Saddam’s Secrets*.

22. Quoted in *General Hussein Kamal UNSCOM/IAEA Briefing*, (UNSCOM/ IAEA Sensitive) 22 August 1995, Amman, Jordan (emphasis added). Transcript available at [http://www.globalsecurity.org/wmd/library/news.iraq/un/unscom-iaea\\_kamal-brief.htm](http://www.globalsecurity.org/wmd/library/news.iraq/un/unscom-iaea_kamal-brief.htm).

23. See, for example, International Institute for Strategic Studies, *The Military Balance: 1990–1991* (London: Brassey’s, 1990), 216–18.

24. See the transcript of statements by Brent Scowcroft, *NBC News Meet the Press*, 27 August 1995, 10.

25. Bush, *Gulf War Exclusive*. Then Secretary of State James Baker also stated that President Bush “had also decided that US forces would not retaliate with chemical or nuclear weapons if the Iraqis attacked with chemical munitions.” James Baker, *The Politics of Diplomacy* (New York: Putnam, 1995), 359.

26. Bernard Brodie, “What Price Conventional Capabilities in Europe?” *Reporter* 28 (23 May 1963): 28.



27. Statements by James Baker and Tariq Aziz, *Frontline*, "The Gulf War, Part I," no. 1407, 9 January 1996 transcript, 9, cited in, Payne, *Deterrence in the Second Nuclear Age*, 136.
28. Carl Kaysen, Robert McNamara, and George Rathjens, "Nuclear Weapons after the Cold War," *Foreign Affairs* 70, no. 4 (Fall 1991): 102.
29. Kimball, "Of Madmen and Nukes."
30. As concluded by Richard Ned Lebow and Janice Gross Stein, *We All Lost the Cold War* (Princeton, NJ: Princeton University Press, 1994), 356.
31. Cong. Curt Weldon, "Congressional Delegation to North Korea Trip Report," (Presentation, Nuclear Strategy Forum, cited with permission), Washington, DC, 22 February 2005.
32. See, for example, the review of North Korean statements on the subject in the report by Mark Schneider, *Kim Jong Il and Nuclear Deterrence* (Fairfax, VA: National Institute for Public Policy, 2005), 13–19.
33. Medalia, "Bunker Busters," 1. See also the extended discussion of this subject in Kurt Guthe, "Implications of a Dynamic Strategic Environment," in Keith Payne et al., eds, *Rationale and Requirements for US Nuclear Weapons and Arms Control, Volume II* (Fairfax, VA: National Institute for Public Policy, 2001), 64–69.
34. General Accounting Office, *Operation Desert Storm: Evaluation of the Air Campaign*, GAO/NSIAD-98-134 (Washington, DC: GAO, June 1997), 198.
35. Tim Ripley, "Kosovo: A Bomb Damage Assessment," *Jane's Intelligence Review* 11, no. 9 (September 1999): 11.
36. *Remarks by Dr. Harold Smith before the Defense Writers Group*, 23 April 1996, 1–4 (as transcribed by the Office of the Assistant Secretary of Defense for Public Affairs).
37. Bryan Fearey, Paul White, John St. Ledger, and John Immele, "An Analysis of Reduced Collateral Damage Nuclear Weapons," *Comparative Strategy* 22, no. 4 (October/November 2003): 312. See also the similar statement by Secretary of Defense Donald Rumsfeld in Ann Scott Tyson, "'Bunker Buster' Casualty Risk Cited," *Washington Post*, 28 April 2005, A-7.
38. See the statement by Harold Brown in US Senate, Committee on Armed Services, *MX Missile Basing System and Related Issues*, Hearings, 98th Congress, 1st Session (Washington, DC: GPO, 1983), 6–7.
39. R. James Woolsey, "US Strategic Force Decisions for the 1990s," *Washington Quarterly* 12, no. 1 (Winter 1989): 82.
40. See, for example, *The Future of the United Kingdom's Nuclear Deterrent*, presented to Parliament by the Secretary of State for Defence and the Secretary of State for Foreign and Commonwealth Affairs by Command of Her Majesty, Cm 6994 (London: Her Majesty's Stationery Office, December 2006); and *Speech by French President Jacques Chirac on Nuclear Deterrence*, at the L'Île Longue submarine base in Finistère on 19 January 2006, available via the French Embassy in the United States at [info-france-usaWWW-Text](http://info-france-usaWWW-Text).
41. For reviews of Russian and Chinese post-Cold War nuclear force and policy developments, see respectively, Mark Schneider, *The Nuclear Forces and Doctrine of the Russian Federation*, Nuclear Strategy Forum no. 003 (Fairfax, VA: National Institute Press, 2006); and Schneider, *The Nuclear Doctrine and Forces of the People's Republic of China*, Nuclear Strategy Forum no. 007 (Fairfax, VA: National Institute Press, November 2007).
42. It appears that Syria received North Korean assistance in the attempted covert construction of a nuclear reactor "not intended for peaceful purposes." White House spokeswoman Dana Perino, quoted in "US Details Reactor in Syria," *Washington Post*, 25 April 2008, A-12.
43. Statement by a spokesman of the North Korean Foreign Ministry, 31 March 2004, Korean Central News Agency, 1 April 2004, Open Source Center, Document KPP20040401000030.



44. Samuel S. Kim, *North Korean Foreign Relations in the Post-Cold War World* (Carlisle, PA: US Army War College, Strategic Studies Institute, April 2007), 87.

45. As observed by Kamram Taremi, a researcher at the Center for Graduate International Studies, University of Tehran, in "Beyond the Axis of Evil: Ballistic Missiles in Iran's Military Thinking," *Security Dialogue* 36, no. 1 (March 2005): 102–3.

46. Klaus Naumann, John Shalikashvili, The Lord Inge, Jacques Lanxade, and Henk van den Breeman, *Towards a Grand Strategy for an Uncertain World: Renewing Transatlantic Partnership* (Washington, DC: Center for Strategic and International Studies, 2007), 94, [http://www.csis.org/media/csis/events/080110\\_grand\\_strategy.pdf](http://www.csis.org/media/csis/events/080110_grand_strategy.pdf).

47. See Dana Linzer and Walter Pincus, "U.S. Detects Signs of Radiation Consistent with Test," *Washington Post*, 14 October 2006, A-14; and Reuters, "S. Koreans Want Nuclear Weapons Due to North-Survey," 12 October 2006, <http://asia.news.yahoo.com/061012/3/2r7t9.html>.

48. "S. Korea Presses US Over 'Umbrella,'" *Washington Times*, 21 October 2006, A-2.

49. Quoted in "North Korea's Nuclear Threat: Is US Nuclear Umbrella Effective?" *Daily Yomiuri*, 20 March 2007, <http://www.opensource.gov/portal/server.pt/gateway>. See also, "Nakasone Proposes Japan Consider Nuclear Weapons," *Japan Times*, 6 September 2006; and Tim Johnson, "Nuclear Taboo Slowly Giving Way," *Miami Herald*, 24 September 2006, 1.

50. Quoted in "North Korea's Nuclear Threat/Reinforcing Alliance with US Helps Bolster Nuclear Deterrence," *Daily Yomiuri* (Internet version) in English, 23 March 2007.

51. Terumasa Nakanishi, "U.S. North Korea Moving Toward Normalizing Diplomatic Ties; Japan Must Discuss Nuclear Deterrence, Prepare for 'Worst-Case Scenario,'" *Seiron*, 1–31 December 2007, 222–33, translated and printed in, Open Source Center, *Japan: Pundit Says Japan Should Discuss Nuclear Deterrence, Worst-Case Scenario*, JPP20071106015003, [https://www.opensource.gov/portal/server.pt/gateway/PTARGS\\_0\\_0\\_200\\_51\\_43/htt](https://www.opensource.gov/portal/server.pt/gateway/PTARGS_0_0_200_51_43/htt) (emphasis added).

52. Joseph Cirincione, "Cassandra's Conundrum," *National Interest*, no. 92 (November/December 2007): 16–17.

53. See the discussion in International Security Advisory Board, *Report on Discouraging a Cascade of Nuclear Weapons States* (Washington, DC: US Department of State, 19 October 2007), 22–23.

54. *Ibid.*, 23.

55. See the discussion in Keith B. Payne, *The Fallacies of Cold War Deterrence and a New Direction* (Lexington: University Press of Kentucky, 2001), 61–73.

56. Quoted in Josef Joffe, "A Peacenik Goes to War," *New York Times Magazine*, 30 May 1999, *New York Times on the Web*, "Archives," 1.

57. Some former senior officials have concluded that the United States must place greater priority on "nation-building" and postconflict "reconstruction." See Behn and Rosen, "US Urged to Focus More on Nation-Building." A new US Army field manual reportedly "puts nation-building as a military task alongside combat operations." Sara Carter, "Army Manual Stresses Nation Building," *Washington Times*, 3 March 2008, A-1.

58. See, for example, The Commission on Integrated Long-Term Strategy (chaired by Fred Iklé and Albert Wohlstetter), *Discriminate Deterrence* (Washington, DC: GPO, 1988), 2.

59. Sidney Drell et al., "A Strategic Choice: New Bunker Busters Versus Nonproliferation," *Arms Control Today* 33, no. 2 (March 2003): 9.

60. See, for example, George Shultz, William J. Perry, Henry A. Kissinger, and Sam Nunn, "A World Free of Nuclear Weapons," *Wall Street Journal*, 4 January 2007, 15.

61. *Future of the United Kingdom's Nuclear Deterrent*, 5.

62. See the testimony of Walter B. Slocombe, undersecretary of defense for policy, *The Future of Nuclear Deterrence, Hearing before the Subcommittee on International Security, Proliferation, and*

*Federal Services of the Committee on Governmental Affairs, United States Senate*, 12 February 1997, 6 (prepared text).

63. Ibid.

64. The limitations on the international system created by the inherent lack of trust within the system are an overarching theme in Kenneth N. Waltz, *Man, the State and War* (New York: Columbia University Press, 1954).

65. See, for example, Walter Cronkite, "Cronkite Champions World Government," *Washington Times*, 3 December 1999, A-2; and The United Methodist Church, Council of Bishops, *A Pastoral Letter to All United Methodists In Defense of Creation: The Nuclear Crisis and a Just Peace* (1986), 71.

66. Winston Churchill, quoted in a speech by Prime Minister Margaret Thatcher to a joint meeting of the US Congress, 20 February 1985, <http://www.margaretthatcher.org/speeches/displaydocument>.

67. See, for example, Shultz et al., "World Free of Nuclear Weapons;" George Shultz, William J. Perry, Henry A. Kissinger, and Sam Nunn, "Toward a Nuclear-Free World," *Wall Street Journal*, 15 January 2008, 13; and Amb. Max Kampelman, "A Serious Look at Our World," *Comparative Strategy* 25, no. 2 (April–June 2006): 153–55.

68. For an aged but still useful examination of the question of deep nuclear reductions, see Francis Hoebler, *How Little Is Enough? SALT and Security in the Long Run* (New York: Crane, Russak & Company, 1981), 20–39.

69. See, for example, US Department of Defense, *Statement on Nuclear Posture Review*, no. 113-02, 9 March 2002, [http://www.defenselink.mil/news/Mar2002/b03092002\\_bt113-02.html](http://www.defenselink.mil/news/Mar2002/b03092002_bt113-02.html).

70. Statement of the Honorable Douglas Feith, undersecretary of defense for policy, Senate Armed Services Committee, *Hearing on the Nuclear Posture Review*, 14 February 2002, 7 (prepared text).

71. Ibid.

72. These points are elaborated in, Kurt Guthe, *A Different Path to Nuclear Arms Reduction*, Discussion Paper (Fairfax, VA: National Institute for Public Policy, 27 December 2007), 1–4.

73. See Keith B. Payne, "The Nuclear Posture Review and Deterrence for a New Age," *Comparative Strategy* 23, no. 4/5 (October–December 2004): 411–20; and Payne, "The Nuclear Posture Review: Setting the Record Straight," *Washington Quarterly* 28, no. 3 (Summer 2005): 135–51.

74. Donald H. Rumsfeld, "Adapting US Strategic Forces," *Department of Defense Annual Report to the President and the Congress 2002*, chap. 7, 4, [http://www.defenselink.mil/execsec/adr2002.html\\_files/chap7.htm](http://www.defenselink.mil/execsec/adr2002.html_files/chap7.htm).

75. Ibid., 2; Statement of the Honorable Douglas Feith, 3, 5, 7; and J. D. Crouch (assistant secretary of defense for international security policy), *Special Briefing on the Nuclear Posture Review*, 9 January 2002, [http://www.defenselink.mil/transcripts/2002/t01092002\\_t0109npr.html](http://www.defenselink.mil/transcripts/2002/t01092002_t0109npr.html).

76. Statement of the Honorable Douglas Feith, 3–5; Crouch, *Special Briefing*; and John Gordon, *Statement before the Senate Armed Services Committee*, 14 February 2002, 2–5 (prepared text).

77. Donald H. Rumsfeld, "Foreword," *Nuclear Posture Review Report*, submitted to Congress on 31 December 2001, <http://www.defenselink.mil/news/Jan2002/d20020109npr.pdf>.

78. Ibid.; and Statement of the Honorable Douglas Feith, 5.

79. Tom Scheber, Keith Payne, and Kurt Guthe, *The 2001 Nuclear Posture Review: Sizing the Nuclear Force* (Fairfax, VA: National Institute for Public Policy, November 2007), 1.

80. Statement of the Honorable Douglas Feith, 7; Rumsfeld, "Adapting US Strategic Forces," 3; and Keith B. Payne (deputy assistant secretary of defense for forces policy, Office of the Secretary of Defense), *Nuclear Posture Briefing to the Defense Science Board*, 20 February 2003.

81. Quoted in Julian Borger, "Bunker Bomb Will Bust Test Ban," *Guardian*, 11 March 2002, 12. See also, Linton F. Brooks, *Statement before the Senate Armed Services Subcommittee on Strategic Forces*, 4 April 2005, 2–3 (prepared text).
82. Tom Scheber, Office of the Secretary of Defense, *The ABCs of the NPR*, (unclassified briefing, 2003).
83. Rumsfeld, "Adapting US Strategic Forces," 5: see also, Statement of the Honorable Douglas Feith, 4.
84. Statement of the Honorable Douglas Feith, 5–6.
85. *Ibid.*, 7.
86. *Ibid.*, 5–6; and Rumsfeld, "Foreword."
87. Statement of the Honorable Douglas Feith, 6.
88. Rumsfeld, "Adapting US Strategic Forces," 5–6; Statement of the Honorable Douglas Feith, 3, 5; Keith B. Payne, *The Nuclear Posture Review: Key Organizing Principles*, (unclassified Department of Defense briefing on the NPR), 30 July 2002, 9; Gordon, *Statement*, 7–8; and Scheber et al., *2001 Nuclear Posture Review*, 3–6.
89. Rumsfeld, "Foreword."
90. Scheber et al., *2001 Nuclear Posture Review*, 6.
91. Richard Sokolsky, "Demystifying the US Nuclear Posture Review," *Survival* 44, no. 3 (Autumn 2002): 141; Morton Halperin, "Parsing the Nuclear Posture Review," *Arms Control Today* 32, no. 2 (March 2002): 19–20; and David McDonough, *The 2002 Nuclear Posture Review: The 'New Triad,' Counterproliferation, and US Grand Strategy*, Centre of International Relations, University of British Columbia, Working Paper no. 38 (August 2003), 35.
92. As described in Scheber et al., *2001 Nuclear Posture Review*, 3–5.
93. See, for example, Roger Speed and Michael May, "Dangerous Doctrine," *Bulletin of the Atomic Scientists* 61, no. 2 (March/April 2005): 38–49; David McDonough, *Nuclear Superiority: The 'New Triad' and the Evolution of Nuclear Strategy*, Adelphi Paper No. 383 (New York: Routledge, 2006), 63–84; and Lawrence Freedman, *Deterrence* (Malden, MA: Polity Press, 2004), 2, 24, 84.
94. Ivo Daalder, quoted in Michael Gordon, "Nuclear Arms: For Deterrence or Fighting?" *New York Times*, 11 March 2002, A-1.
95. See, for example, Seymour Melman, "Limits of Military Power," *New York Times*, 17 October 1980, 31.
96. James Carroll, "The Paradox of Missile Defense," *Boston Globe*, 5 June 2007, A-11; see also, David Rupp, "Democratic Senator Says Bush Policies Increase Risk of Nuclear Abyss," *Global Security Newswire*, 29 January 2004, [http://www.nti.org/d\\_newswire/issues/2004\\_1\\_29.html#8944A21C](http://www.nti.org/d_newswire/issues/2004_1_29.html#8944A21C).
97. Tom Scheber and Keith Payne, *Examination of U.S. Strategic Forces Policy and Capabilities* (Fairfax, VA: National Institute for Public Policy, February 2008), 4 (emphasis in original).
98. As quoted in "Nuclear Weapons 'Immoral,' Say Religious, Scientific Leaders," *Los Angeles Times*, 9 March 2004, <http://www.oneworld.net>.
99. Robert Scheer, "Commentary: A Nuclear Road of No Return: Bush's Bid for New Kinds of Weapons Could Put the World on a Suicidal Course," *Los Angeles Times*, 13 May 2003, B-13.
100. William Arkin, "Secret Plan Outlines the Unthinkable," *Los Angeles Times* (*latimes.com*), 10 March 2002, <http://www.latimes.com/news/opinion/laop-arkinmar10.story>.
101. Crouch, *Special Briefing*.
102. This anecdote is recounted in Elting Morison, *Men, Machines, and Modern Times* (Cambridge, MA: MIT Press, 1966), 17–18.
103. *Ibid.*, 18.
104. *Ibid.*